

Notice of Allowability

Application No.

10/581,923

Applicant(s)

ISHIZUKA ET AL.

Examiner

Ling-Siu Choi

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 10/16/2007.
2. ☒ The allowed claim(s) is/are 8-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This Office Action is in response to the Amendment filed 10/16/2007. Claims 1-7 were canceled and claims 8-21 are now pending.

Allowable Subject Matter

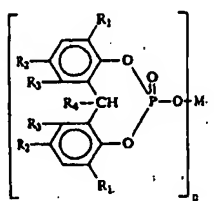
2. Claims 8-21 are allowed.

3. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Sugita et al. (JP 10-251469), Miyazawa et al. (JP 10-251445), Ishizuka et al. (JP 10-251470), and Kimura et al. [US 2004/0166163 A1 (JP 2001-220464)].

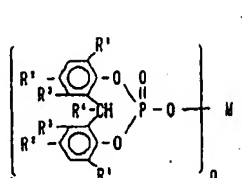
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Summary of claim 8:

A vinyl chloride resin composition comprising	
a vinyl chloride resin	100 parts by mass
a co-ground mixture <u>obtained by co-grinding a mixture of</u>	
(a) of at least one member selected from the group consisting of an organic phosphoric ester compound and a salt thereof represented by general formula (I):	0.001 -10 parts by mass
 <p>$R_1, R_2, \text{ and } R_3$ are hydrogen atom or a straight-chain or branched alkyl group having 1 to 18 carbon atoms; R_4 is a hydrogen atom or a methyl group; $n = 1$ or 2; $M =$ hydrogen atom or an alkali metal atom when <u>n is 1</u>, or $M =$ an alkaline earth metal atom or a zinc atom <u>when n is 2</u></p>	
(b) of a grinding aid	0.001 -10 parts by mass

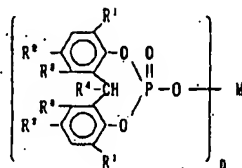
Sugita et al. disclose a composition for stretch film having excellent scorch resistance, comprising (A) 100 parts by weight of PVC resin, (B) 10-50 parts by weight of an adipate plasticizer, (C) 0.01-5 parts by weight of zinc carboxylate, (D) 0.001-10 parts by weight of a cyclic organic phosphoric ester compound, and optionally, (E) 0.01-5 parts by weight of calcium carboxylate, wherein the cyclic organic phosphoric ester compound is represented in the general formula of

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wherein $R^1 - R^3$ are each H or C_{1-18} alkyl; R^4 is H or CH_3 ; M is an alkali metal when n is 1; M is an alkaline earth metal or Zn when n is 2 (abstract). It is noted that either calcium carboxylate or zinc carboxylate reads on the grinding aid. However, Sugita et al. do not teach or fairly suggest the claimed vinyl chloride resin composition, wherein the co-ground mixture obtained by co-grinding a mixture of the organic phosphoric ester compound and a grinding aid is mixed with a vinyl chloride resin.

Miyazawa et al. disclose a composition comprising 100 parts by weight of a **polyvinyl chloride** resin and 0.001-5 parts by weight of a **cyclic organic phosphoric ester** compound which is represented in the general formula of

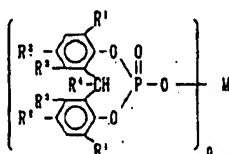


wherein $R^1 - R^3$ are each H or C_{1-18} alkyl; R^4 is H or CH_3 ; M is an alkali metal when n is 1; M is an alkaline earth metal or Zn when n is 2 (abstract). attention is drawn to [0061], wherein 0.5 parts by weight of **zinc stearate** and 1.0 part by weight of **barium stearate** is compound with 100 parts by weight of polyvinyl chloride. However, Miyazawa et al. do not teach or fairly suggest the claimed vinyl chloride resin.

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composition, wherein the co-ground mixture obtained by co-grinding a mixture of the organic phosphoric ester compound and a grinding aid is mixed with a vinyl chloride resin.

Ishizuka et al. disclose a composition comprising (A) 100 parts by weight of **PVC**, (B) 0.001-10 parts by weight of a **cyclic organic phosphoric ester** compound, (C) 0.1-10 parts by weight of a thermally decomposable organic blowing agent, and optionally (D) 20-150 parts by weight of a plasticizer, wherein the cyclic organic phosphoric ester compound is represented in the general formula of

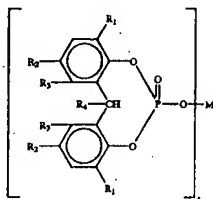


wherein $R^1 - R^3$ are each H or C_{1-18} alkyl; R^4 is H or CH_3 ; M is an alkali metal when n is 1; M is an alkaline earth metal or Zn when n is 2 (abstract). Attention is directed to [0048], wherein 1 part by weight of **hydrotalcite** and 0.5 part by weight of **zinc acetate** are compound with 100 parts by weight of PVC. Either hydrotalcite or zinc acetate reads on the grinding aid. However, Ishizuka et al. do not teach or fairly suggest the claimed vinyl chloride resin composition, wherein the co-ground mixture obtained by co-grinding a mixture of the organic phosphoric ester compound and a grinding aid is mixed with a vinyl chloride resin.

Kimura et al. disclose a composition for a medical tool, comprising (A) a vinyl chloride resin, (B) a cyclic organic phosphoric ester compound, and (C) a pyrrithione

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compound, wherein the cyclic organic phosphoric ester compound is represented in the general formula of



wherein $R^1 - R^3$ each represent H or C_{1-18} straight-chain or branched alkyl group; R^4 represents H or CH_3 ; M represents an alkali metal when n is 1; M represents an alkaline earth metal or Zn when n is 2 (claim 1). Kimura et al. further disclose that the amount of **cyclic organic phosphoric ester** compound is 0.005-10 parts by weight per 100 parts by weight of **PVC** ([0022]). Attention is drawn to Example 2, wherein 1.0 parts by weight of synthetic **hydrotalcite** and 0.5 part by weight of **zinc stearate** are compounded with 100 parts by weight of polyvinyl chloride. Kimura et al. further disclose that "[a] preferred particle size, while not particularly limited, is 0.1 to 100 μm in order not to reduce the characteristics of the vinyl chloride resin. When the powder is added to the vinyl chloride resin, it can be added as such" ([0032]). It is noted that either synthetic hydrotalcite or zinc stearate reads on a grinding aid. However, Kimura et al. do not teach or fairly suggest the claimed vinyl chloride resin composition, wherein the co-ground mixture obtained by co-grinding a mixture of the organic phosphoric ester compound and a grinding aid is mixed with a vinyl chloride resin.

Furthermore, the following results demonstrate that the mixing orders will lead to compositions having different properties.

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		example			comparative example		
		1	2	3	1	2	3
PVC resin		100	100	100	100	100	100
organic phosphoric ester compound		2.9	2.9	2.9	2.9	2.9	2.9
hydrotalcite		1.0	1.0	1.0	1.0	1.0	1.0
zinc stearate		0.3	0.3	0.3	0.3	0.3	0.3
heat stability (blackening time: min)		105	105	105	90	90	90
discoloration	pressing time: 5 min	23.5	24	21	42	41	35
	pressing time: 30 min	31	31	30	69	68	60
transparency (haze:%)		15.6	15.5	15.3	19.8	19.4	18.2

The shadowed portion represents all components being co-ground before the resulting mixture is added to the PVA resin.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

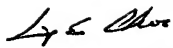
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

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If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

November 10, 2007